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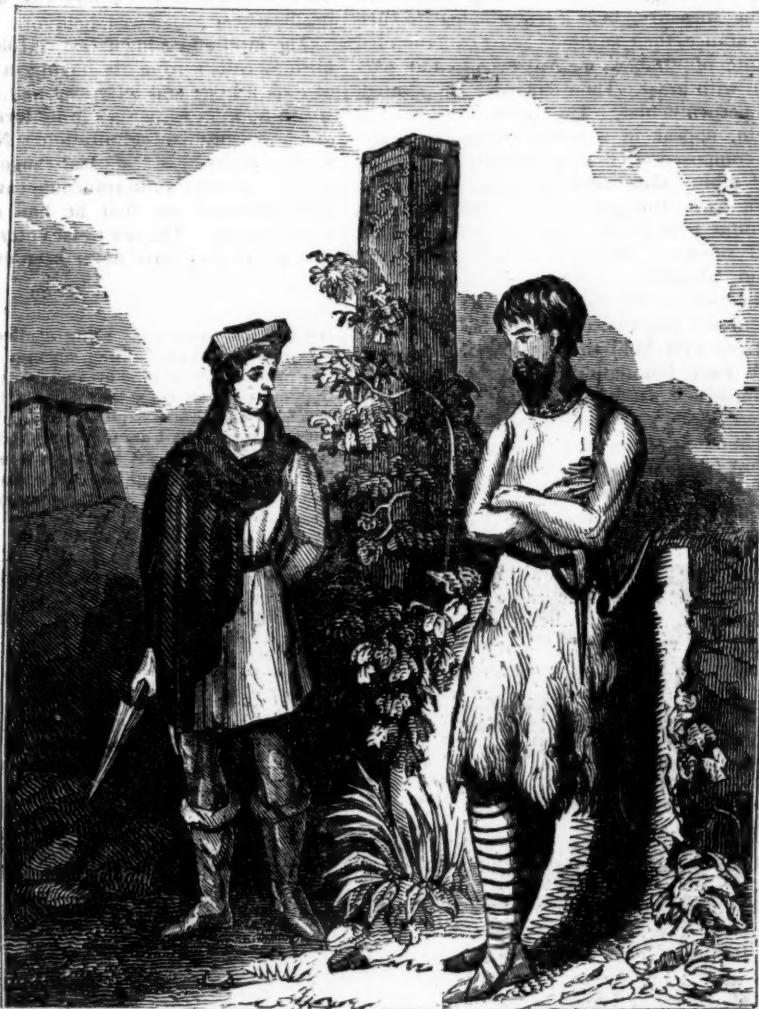
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ONE PENNY.

UNDER THE DIRECTION OF THE COMMITTEE OF GENERAL LITERATURE AND EDUCATION
APPOINTED BY THE SOCIETY FOR PROMOTING CHRISTIAN KNOWLEDGE.

MANNERS AND CUSTOMS OF THE ANGLO-SAXONS.



SAXON FREEMAN.

SAXON SERF.

THE Saxons had formerly four different ranks; 1. the nobility; 2. the freeman (*franklin*); 3. the freedman; 4. the serf, or slave; and as it was arranged by law that each person should marry into his own rank, their different orders were preserved uncontaminated; whoever disobeyed this law, expiated the crime by instant death. The most severe laws were used for the punishment of malefactors. They had also many other useful customs and good laws, for the promotion of probity and good order, which would have been the means of producing the most perfect happiness, had they had any true knowledge of their Creator. They worshipped, besides their other deities, the trunks and leaves of trees, and filled with them a temple which they named Irmensal. They

worshipped Mercury, to whom, on certain days, they offered human sacrifices. They considered their gods as too great and dignified to be shut up in temples, or formed in the likeness of men; they therefore consecrated groves and woods to them, in which their worship was performed. They placed great faith in signs and omens, particularly in the notes and flight of birds, and the snorting and neighing of horses. One of these animals which was kept by the priests was deemed sacred, and when they were about to declare war against their enemies, he was led out. If he put his right foot forward it was considered a good omen, but if he stepped with his left foot first the omen was considered unlucky, and they desisted from their intended enterprise. They sowed barley

and wheat, from which they not only made the finest white bread, but also a peculiar sort of drink, a sort of beer, of which they drank immoderately. It is almost incredible how much of this liquor they consumed at a meal; he who was able to drink the most, acquired not only fame and praises, but was crowned with a garland of roses and sweet-smelling herbs. He who, after many invitations, refused to drink with his companions was considered an enemy. When they drank they were accustomed to pledge each other; that is, the person who was about to drink, asked one of the company whether he would pledge him,—the other replying that he would, held up his knife or sword, to guard him whilst he drank, to protect him from the treacherous stroke of some secret enemy.

At their banquets their diet was rude, consisting of venison, dry sausages, onions, wild apples, curds, cream, and salt butter. At the royal banquets, besides their common drink, they had rich wines, or liquors made of honey, and mulberry-juice mixed with spices. These meetings generally terminated in riotous excessive drinking, not excepting even their religious festivals, at which they swallowed large draughts in honour of their gods.

Hospitality may be justly reckoned among the national virtues of the Anglo-Saxons, for in social entertainment and hospitality no nation was ever more liberal; they received all comers, without exception, into their houses, and feasted them in the best manner that their circumstances could afford. When all their provisions were consumed they conducted their guests to the next house, where they were received with the same frankness, and entertained with the same generosity.

These people were described by all the ancient writers as remarkably tall, strong, and hardy in their persons, delighting much in war and military exercises, and accounting it more honourable to take the necessities of life by force from others, than to provide them by their own industry. They were free and bountiful in their manners, of a cheerful temper, and, though fierce and savage to their enemies, kind and liberal towards each other. Long after their settlement in this island, they were remarkable among the European nations for the symmetry of their shape, the fairness of their complexions, and the fineness of their hair. Their dress was very simple, that of the serf, or peasant, being a loose tunic made of linen or woollen cloth, ornamented with patches of the skins of different animals; they also had large stockings of clumsy manufacture, which reached to the knee, but not unfrequently they went barefoot. On the head they wore a rude cap made of skins with the fur inwards; they wore round their throats a metal collar bearing their own name, and the name of the noble, or freeman, who owned them.

The dress of the king and his nobles was a loose tunic, added to the mantle or cloak, which hung down before and behind, and was fastened on one shoulder with a brooch or buckle. They covered their legs with a kind of bandage, which was wound round, or with a stocking reaching above the knee. They had also a sort of boot, curiously ornamented at the top. The females wore a long loose robe, reaching to the ground. The head was covered with a hood, or veil, which, falling down in front, was wrapped about the neck. The Anglo-Saxons considered fine hair as one of the greatest ornaments to their persons, and took great pains to dress it to advantage. Young unmarried women wore their hair uncovered, and flowing in ringlets over their

shoulders, but as soon as they were married they cut it shorter, tied it up, and put on a head-dress. To have the hair entirely cut off was a great disgrace,—so much so, that it was used as a capital punishment. The clergy were obliged to shave the crowns of their heads, and to keep their hair short, which distinguished them from the laity. The men allowed their beards to grow.

The Saxons never went to war without consulting their wives, to whose advice they paid the greatest regard. Their arms consisted of a spear or lance, which was carried in the hand, a long sword appended to their side, a short dagger, which was stuck into a girdle placed round the tunic for that purpose, and a shield. The latter was held of such importance, that if a soldier lost his shield, he was prohibited all participation in sacred rites, and so severely was this privation felt, that many who had incurred it destroyed themselves, rather than exist under the imputation of dishonour.

In peace they wore on their heads a bonnet, but when going to war they placed on their heads a metal helmet. They went singing to war, carrying before them the images of their gods, and they had certain characters engraved upon their spears, which were considered as magic spells. Every tenth prisoner taken in battle was sacrificed to Woden, who was supposed to be highly pleased with such barbarous slaughter. They believed that every one slain in battle would sit at ease in Woden's hall, and quaff ale from the skulls of former enemies, an honour to which none could be admitted who had died of disease, or on a bed. From these people Britain, for some time, obtained the name of Saxony; but when the Angles, who came over with them, became the most powerful, the country was called Anglia and Angleland, and the people were designated Anglo-Saxons. To this hasty sketch of the manners and habits of our early ancestors, the singularity which at present marks the English character may be traced. To them are we indebted for that manliness and force of mind, that independence of principle and conduct, which belongs, perhaps, to no other nation upon the earth; while our subsequent affinities with other parts of Europe, and especially with France, have refined the rude and baser parts of the picture, and given to it a colouring and expression exclusively its own. The same observation may be extended to the English language. It draws deeply from a Saxon source its originality and its strength, while it has obtained such an accession of grace and beauty from the romance languages of the South, that it is capable of expressing any subject of human thought, with more force and variety than can be found in any of the modern tongues of the present world.

There is, indeed, throughout the whole, a very pleasing analogy to be noticed between the English character and the English language. Both have been polished and cultivated by our continued intercourse with the other nations of the globe, but both are indebted for peculiarities which distinguish them from other men, to the simple, but powerful, ancestry from which we spring.

TRIVIAL circumstances, which show the manners of the age, are often more instructive, as well as entertaining, than the great transactions of wars and negotiations, which are nearly similar in all periods, and in all countries of the world.—HUME.

THERE is enough in the present supports, and in the eternal hopes of Christianity, to brighten the fading eye, and to animate the sunken cheek.

FALL OF LOCUSTS.

A FALL of Locusts, beyond all comparison the most awful sight I have ever seen, is considered, in eastern and southern countries, the most unfailing manifestation of the wrath of God.

Travelling along the western coast of Africa, I once beheld this terrible infliction. These creatures fell in thousands, and ten thousands, around us and upon us, on the sands along which we were riding, and in the sea that was beating at our feet; yet we were removed from their most oppressive influence; for, a few hundred yards to our right, darkening the air, the great innumerable host came on, slowly and steadily, advancing in a direct line, and in a mighty moving column. The fall of locusts from this central column was so great, that when a cow, directly under the line of flight, attempting ineffectually to graze in the field, approached her mouth to the grass, there rose immediately so dense a swarm, that her head was for the moment almost concealed from sight; and as she moved along, clouds of locusts rose up under her feet, visible even at a distance, as clouds of dust set in motion by the wind on a stormy day. At the extremity of the field I saw the husbandmen bending over their staffs, and gazing with hopeless eyes upon that host of death, which swept, like a destroying angel, over the land, and consigned to ruin all the prospects of the year; for, wherever that column winged its flight, beneath its withering influence the golden glories of the harvest perished, and the leafy honours of the forest disappeared. There stood those ruined men, silent and motionless, overwhelmed with the magnitude of their calamity, yet conscious of their utter inability to control it; while, further on, where some woodland lay in the immediate line of the advancing column, heath set on fire, and trees kindling into a blaze, testified the general horror of a visitation which the ill-fated inhabitants endeavoured to avert by such a frightful remedy. They believed that the smoke arising from the burning forest, and ascending into the air, would impede the direct march of the column, throw it into confusion, drive the locusts out to sea, and thus deliver the country from their desolating presence.

It was an awful, and, indeed, a painful scene, and I shall never forget it; yet, perhaps, there was not one of those whose blighted fortunes I then commiserated, who would not have considered my assassination well-pleasing to their God, and few, perhaps, who would have scrupled to attack me, as a Christian dog, if I had been unarmed and unattended by a trusty band.

[Portugal and Galicia, by an English Nobleman.]

RUSTIC PHILOSOPHY.

THE countryman, let him live at never so great a distance, has his ways of philosophizing for the common uses of life, as well as speculative gentlemen in town. It is true, his methods of proceeding are but rude and unpolished, such as nature suggests; but, nevertheless, they are such as he is well satisfied with, and what in many cases prove very useful to him; however, they serve greatly to pleasure and amuse him in all.

Thus he estimates the quantity of rain that has fallen in the night by the height of his pond in the yard, his *server*, as it is called in some places; a word either abbreviated from the French *reservoir*, or denominated so from its use in *serving* the family. His compass is the smoke of his chimney; but his barometer, besides certain natural inferences, that he makes from the sporting of his sheep, or the flying

of the martins and swallows, is more artificial, for he has either a black line graduated on the wall of his house, with a long string stretched across it, or a Florence flask with the mouth downward in a phial of water. The chronometer is an hour-glass, which he regulates once in two or three days, by a line which the shadow of his door-post never fails to touch, at such an hour, when the sun shines. He has a method also of making a guess at the lengthening or shortening of the days, concerning which he has a saying which is very general all over England:

At New-year's tide,
They are lengthened a cock's stride.

Everybody knows the meaning of this saying, to wit, that it intends to express the lengthening of the day in a small, but perceptible degree; but very few are aware of the ground and occasion of it, which is the less to be wondered at, since there is something uncommon, and seemingly improper, in applying long measure, inches and feet, to time.

But the countryman knows what he says, and borrows his idea from hence: at the Winter solstice he observes where the shadow of the upper lintel of his door falls at twelve o'clock, and makes a mark. At New-year's Day, the sun being higher, when at the meridian, he finds the shadow is come nearer the door by four or five inches, which for chime's sake he calls a cock's stride, and so by that he expresses the sensible increase of the day. Whereupon it should be observed, that before the style was altered, which was long after this saying came into use, the distance of time was greater by eleven days between the solstice and New-year's Day than it is now; and consequently, the difference, as to the sun's altitude, or the length of the days at those two times, would be more susceptible than it is now. P. G.

EVIDENCE IN EVERY THING.

SEE here, I hold a Bible in my hand, and you see the cover, the leaves, the letters, the words, but you do not see the writers, the printer, the letter-founder, the ink-maker, the paper-maker, or the binder. You never did see them, you never will see them, and yet there is not one of you that will think of disputing or denying the being of these men. I go further: I affirm, that you see the very souls of these men in seeing this book, and you feel yourselves obliged to allow, that they had skill, contrivance, design, memory, fancy, reason, and so on. In the same manner, if you see a picture, you judge there was a painter; if you see a house, you judge there was a builder of it; and if you see one room contrived for this purpose, and another for that; a door to enter, a window to admit light, a chimney to hold fire, you conclude the builder was a person of skill and forecast, who formed the house with a view to the accommodation of its inhabitants. In this manner examine the world, and pity the man, who, when he sees the *sign* of the sheaf, hath sense enough to know, that there is a joiner, and somewhere a painter, but who, when he sees the sheaf itself, is so stupid as not to say to himself This had a wise and a good Creator.—ROBINSON.

CORRECT opinions well established on any subject, are the best preservative against the seductions of error.—BISHOP MANT.

HE only is rich in friends who calculates them by their worth, and not by their number.—R. C.

WELL-arranged time is the surest mark of a well-arranged mind.—PITMAN.

NOTES ON FOREST TREES. No. IV.

Happy lie,
Whom what he views of beautiful, or grand
In nature, from the broad majestic oak,
To the green blade that twinkles in the sun,
Prompt with remembrance of a present God.

COWPER.

THE SCOTCH FIR, (*Pinus sylvestris*).

THE Scotch Fir, or Pine, is not peculiar to Scotland, but is common to all the mountain-ranges of Europe; in low damp situations it never thrives, but delights in the exposed summits of the loftiest rocks, over which the earth is but thinly scattered; there its roots wander afar in the wildest reticulation, whilst its tall, furrowed, and often gracefully-sweeping, red and gray trunk, of enormous circumference, rears aloft its high umbrageous canopy. Sir Walter Scott describes its situation above the rest of the trees of the forest:—

Aloft, the ash and warrior oak
Cast anchor in the rifted rock;
And higher yet the pine tree hung
His shattered trunk, and frequent flung,
Where seemed the cliffs to meet on high,
His boughs athwart the narrow sky.
Highest of all, where white peaks glanced,
Where glistening streamers waved and danced,
The wanderer's eye could barely view,
The summer heaven's delicious blue.

The Fir was a very great favourite with Gilpin, who considered it, as it really is, to be, under favourable circumstances, a very picturesque object in a landscape: the earnestness with which he defends its character is peculiarly forcible; he says, "It is a hardy plant, and, therefore, put to every servile office. If you wish to screen your house from the south-west wind, plant Scotch Firs, and plant them close and thick. If you want to shelter a nursery of young trees, plant Scotch Firs, and the phrase is, you may afterwards weed them out at your pleasure. This

is ignominious. I wish not to rob society of these hardy services from the Scotch Fir, nor do I mean to set it in competition with many trees of the forest which, in their infant state, it is accustomed to shelter; all I mean is, to rescue it from the disgrace of being thought fit for nothing else, and to establish its character as a picturesque tree. For myself, I admire its foliage, both the colour of its leaf and its mode of growth. Its ramification, too, is irregular and beautiful."

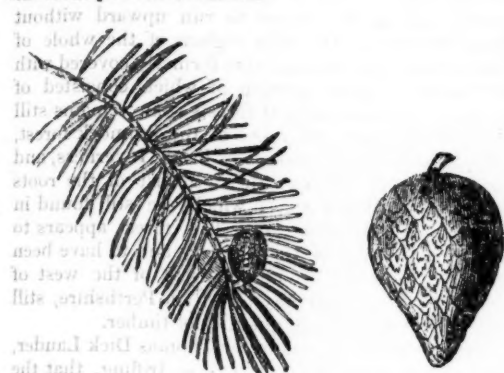
The practice of planting this tree in groups is the cause to which its unfavourable character, as a picturesque object, may be attributed, the closeness of growth causing the stems to run upward without lateral branches. The hilly regions of the whole of Great Britain and Ireland were formerly covered with vast forests, a great portion of which consisted of Fir-trees. Of these ancient forests some remains still exist; in Scotland, the relics of the Rannock forest, on the borders of the counties of Perth, Inverness, and Argyle, are well known; these consist of the roots and a few scattered trees, which are still found in situations of difficult access. This forest appears to have stretched across the country, and to have been connected with the woody districts of the west of Scotland. The Abernethy forest, in Perthshire, still furnishes a considerable quantity of timber.

"At one time," we quote Sir Thomas Dick Lauder, Bart., "the demand for it was so trifling, that the Laird of Grant got only twenty pence for what one man could cut and manufacture in a year. In 1730 a branch of the York Buildings Company purchased seven thousand pounds' worth of timber, and by their improved mode of working it, by saw-mills, &c., and their new methods of transporting it in floats to the sea, they introduced the rapid manufacture and removal of it, which afterwards took place throughout the whole of the sylvan districts. About the year 1786 the Duke of Gordon sold his Glenmore forest to an English company for 10,000*l*. This was supposed to be the finest fir-wood in Scotland. Numerous trading vessels, some of them above five hundred tons burden, were built from the timber of this forest, and one frigate, which was called the Glenmore. Many of the trees felled measured eighteen and twenty feet in girth, and there is still preserved at Gordon Castle, a plank nearly six feet in breadth, which was presented to the Duke by the Company. But the Rothiemarchus forest was the most extensive of any in that part of the country; it consisted of about 16 square miles. Alas! we must, indeed, say, it was, for the high price of timber hastened its destruction. It went on for many years, however, to make large returns to the proprietor, the profit being sometimes 20,000*l*. a year."

Besides the forests we have mentioned, there are still in existence other tracts of land in different parts of Scotland covered with this timber. The attention which has been drawn to the value of the Scotch Fir has been an inducement to proprietors of land, to cause extensive plantations to be formed in suitable spots; but Nature herself takes measures to perpetuate her work where the hand of man has carried destruction; for, after the old trees have been felled and carried off the ground, young seedlings come up as thick as in the nurseryman's seed-bed.

The timber supplied by the Scotch Fir is called Red Deal, and the uses to which it is applied render it necessary that the stem should be straight, and close planting materially assists in this object, by preventing the possibility of the trees flinging out their lateral branches; this, as we have already noticed, disfigures

the tree in the eye of an artist, however much it may delight that of a timber-merchant. The straightest and cleanest-grown trees are selected for masts, spars, scaffold-poles, &c., while the largest sticks are sawed into planks for various purposes. Its wood is very durable, and resists the action of water excellently. The persons employed at different times in the endeavour to rescue the cargo of the Royal George, which foundered off Spithead, in the year 1782, discovered that the fir-planks had suffered little, if any, injury, while the other timbers of the vessel had been much acted upon by the water and different species of worms.



LEAVES AND MALE BLOSSOM OF SCOTCH FIR. CONE OF SCOTCH FIR.

In Holland this tree has been used for the purpose of preparing the foundations of houses in their swampy soil; 13,659 great masts of this timber were driven into the ground for the purpose of forming the foundation of the Stadthouse at Amsterdam. But it is not only for its timber that we are indebted to this tree; those useful articles, tar, pitch and turpentine are all yielded by its sap.

In medicine, our forefathers considered the various productions of this tree of wonderful service, and the distilled water of the cones was reckoned an excellent cosmetic. One old writer, Thomas Bartolinius, disclaims the use of hops in beer as "pernicious and malignant, and apt to usher in infections, nay, plagues, &c.;" he recommends in their stead, "shavings of deal-boards to give a grateful odour to the drink."

The mode of perpetuating the Fir is by means of seeds, and the young plants are to be treated in the same manner as those of the Norway Spruce, already noticed.

SINCE business and gaiety are always drawing our attention away from a future state, some admonition is frequently necessary to recall it to our minds; and what can more properly renew the impression than the example of mortality which every day supplies? The great incentive to virtue, is the reflection that we must die; it will, therefore, be useful to accustom ourselves, whenever we see a funeral, to consider how soon we may be added to the number of those whose probation is past, and whose happiness or misery shall endure for ever.—*Rambler*.

THERE is not, in my opinion, a more pleasing and triumphant consideration in religion, than that of the perpetual progress which the soul makes towards the perfection of its nature, without ever arriving at a period in it. To look upon the soul as going on from strength to strength, to consider that she is to shine for ever with new accessions of glory, and brighten to all eternity; that she will be still adding virtue to virtue, and knowledge to knowledge; carries in it something wonderfully agreeable to that ambition which is natural to the mind of man. Nay, it must be a prospect pleasing to God himself, to see his creation for ever beautifying in his eyes, and drawing nearer to him, by greater degrees of resemblance.—*ADDISON*.

CHRISTMAS DAY.

YET, once more, and once more, awake, my harp,
From silence and neglect,—one lofty strain;
Lofty, yet wilder than the winds of heaven,
And speaking mysteries more than words can tell,
I ask of thee; for I, with hymnings high,
Would join the dirge of the departing year.

Yet with no wintry garland from the woods,
Wrought of the leafless branch, or ivy sear,
Wreath I thy tresses, dark December! now,
Me higher quarrel calls, with loudest song
And fearful joy, to celebrate the day
Of the Redeemer. Near two thousand suns
Have set their seals upon the rolling lapse
Of generations, since the day-spring first
Beamed from on high! Now to the mighty mass
Of that increasing aggregate we add
One unit more.—Space, in comparison,
How small, yet marked with how much misery!
Wars, famines, and the fury, Pestilence,
Over the nations hanging her dread scourge;
The oppressed, too, in silent bitterness,
Weeping their sufferance, and the arm of wrong,
Forcing the scanty portion from the weak,
And steeping the lone widow's couch with tears.

So has the year been characterized with woe
In Christian land, and mark'd with wrongs and crimes,
Yet 'twas not thus He taught, not thus He lived,
Whose birth we this day celebrate with prayer
And much thanksgiving.—He, a man of woes,
Went on the way appointed—path, though rude,
Yet borne with patience still:—He came to cheer
The broken-hearted, to raise up the sick,
And on the wandering and benighted mind
To pour the light of truth. O task divine!
O more than angel teacher! He had words
To soothe the barking waves, and hush the winds;
And when the soul was tossed in troubled seas,
Wrapped in thick darkness and the howling storm,
He, pointing to the star of peace on high,
Armed it with holy fortitude, and bade it smile
At the surrounding wreck.
When with deep agony his heart was racked,
Not for himself the tear-drop dewed his cheek,
For them He wept, for them to heaven he pray'd,
His persecutors—"Father, pardon them,
They know not what they do."

Angels of heaven,
Ye who beheld Him fainting on the cross,
And did Him homage, say, may mortal join
The hallelujahs of the risen God?
Will the faint voice and groveling song be heard
Amid the seraphim in light divine?
Yes, He will deign, the Prince of Peace, will deign,
For mercy, to accept the hymn of faith,
Low though it be, and humble. Lord of life,
The Christ, the Comforter, thine advent now
Fills my uprising soul.—I mount, I fly
Far o'er the skies, beyond the rolling orbs;
The bonds of flesh dissolve, and earth recedes,
And care, and pain, and sorrow are no more.

KIRKE WHITE.

It is of unspeakable advantage to possess our minds with an habitual good intention, and to aim all our thoughts, words, and actions, at some laudable end, whether it be to the glory of our Maker, the good of mankind, or the benefit of our own souls. A person who is possessed with such an habitual good intention, enters upon no single circumstance of life without considering it as well-pleasing to the Author of his being, conformable to the dictates of reason, suitable to human nature in general, or to that particular station in which Providence has placed him. He lives in a perpetual sense of the Divine Presence, regards himself as acting, in the whole course of his existence, under the observation and inspection of that Being who is privy to all his motions, and all his thoughts, who knows his "downsitting and his uprising, who is about his path and about his bed, and spieth out all his ways." In a word, he remembers that the eye of his Judge is always upon him; and in every action, he reflects that he is doing what is commanded or allowed by Him who will hereafter either reward or punish it.—*ADDISON*

THE LEATHERN BOTTLES OF THE ANCIENTS.

BOTTLES made of skin were used anciently by most nations, and still are used in the East. It appears, from a figure found among the ruins of Herculaneum, that, after the skin had been stripped off the animal, and properly dressed, the places where the legs had been, were strongly closed up; and where the neck was, an opening was left for receiving and discharging the contents of the bottle. Such bottles, when full, must have differed greatly from the same when empty. On receiving the liquor they must be greatly swollen and distended, and no doubt, they must be swollen still further by the fermentation of the liquor within them, as that advances to ripeness: so that in this state, if no vent be given to it, the liquor may overpower the strength of the bottle; or, by searching every crevice and weaker part, if it find any weaker part, it may penetrate by that. Hence arises the propriety of "putting new wine into new bottles," which being in the prime of their strength, may resist the expansion, the internal pressure of their contents, and preserve the wine to due maturity, while old bottles may without danger contain old wine, the fermentation of which is already past.

These bottles are supposed not only to be frequently rent, when grown old and much used, but also to be capable of being repaired. Sir J. Chardin describes the manner in which they are mended:—

They do it (he says,) sometimes by setting in a piece; sometimes by gathering up the wounded place, in manner of a purse; sometimes they put in a round flat piece of wood, and by that means stop the hole.

The same writer has likewise given us the following amusing account of these bottles:—

The Arabs, and all those that lead a wandering kind of life, keep their water, milk, and other kind of liquors in these bottles. They keep in them more fresh than otherwise they would do. These leather bottles are made of goat-skins. When the animal is killed, they cut off its feet and its head, and they draw it in this manner out of the skin, without opening its belly. They afterwards sew up the places where the legs were cut off, and the tail; and when it is filled, they tie it about the neck. These nations, and the people of Persia, never go a journey without a small leather bottle of water hanging by their side like a scrip. The great leather bottles are made of the skin of a he-goat, and the small ones, that serve instead of a bottle of water on the road, are made of a kid's skin.

They put into these goat-skin and kid skin vessels everything which they want to carry to a distance in the East, whether dry or liquid, and very rarely make use of boxes and pots, unless it be to preserve such things as are liable to be broken. The reason is their making use of beasts of carriage for conveying these things, who often fall down under their loading, or throw it down; and also because it is in pretty thin woollen sacks that they enclose what they carry. There is another advantage, too, in putting the necessities of life in these skin vessels; they are preserved fresher: the ants and other insects cannot make their way to them; nor the dust get in, of which there are such quantities in the hot countries of Asia, and so fine, that there is no such thing as a coffer impenetrable to it; therefore it is that butter, honey, cheese, and other like aliments, are enclosed in vessels made of the skins of this species of animals.

The Arabs use a larger kind of bottle, named *Girba*, which is thus described by Bruce:—

A *girba* is an ox's skin squared, and the edges sewed together very artificially by a double seam, which does not let out water, much resembling that upon the best English cricket-balls. An opening is left at the top of the *girba*, in the same manner as the bung-hole of a cask. Around this, the skin is gathered to the size of a large handful, which, when the *girba* is full of water, is tied round with a whipcord. These *girbas* generally contain about sixty gallons each, and two of them are the load of a camel.

They are all then besmeared on the outside with grease, as well to hinder the water from oozing through, as to prevent its being evaporated by the heat of the sun, which, in fact, happened to us twice, so as to put us in imminent danger of perishing by thirst.

THE ANTS.

WE now come to the *Ants*, a tribe almost equally interesting with that of the Bees, for their wonderful industry. They are universal collectors; everything that comes in their way, whether animal or vegetable, living or dead, answers their purpose; and the paths to their nests are always darkened with the busy crowds that are moving to and fro. Their great function seems to be to remove everything that appears to be out of its place, and cannot go about its own business. I have seen several of them dragging a half-dead snake, about the size of a goose-quill. They do not, however, like the bees, usually store up provisions, but they will imbibe sweet juices from fruits and also from the plant-lice, which may be called their cows. However, almost all their care and labour are connected with the nurture and sustenance of their young.

I am indebted to the kindness of Lieutenant Colonel Sykes, of the Bombay Army, for some interesting observations upon three species of ants, particularly one, which, from making its nests on the branches of trees, is called the *Tree-Ant*, singularly exemplifying the extraordinary instincts of these laborious and provident insects.

The *Tree-Ant* inhabits the Western Ghauts, in the collectorate of Poona, in the Deccan, at an elevation of from two thousand to four thousand feet from the level of the sea. It is of a ferruginous colour, two-tenths of an inch in length; the head of the neuter disproportionately large; the thorax is armed posteriorly with two sharp spines. When moving, the insect turns the abdomen back over the thorax, and the knotty pedicle lies in a groove between the spines. The male is without the spines.

These ants are remarkable for forming their nests, called by Marattas *moongeara*, on the boughs of trees of different kinds; and their construction is singular, both for the material and the architecture, and is indicative of admirable foresight and contrivance: in shape they vary from globular to oblong, the longest diameter being about ten inches, and the shortest eight. The nests consist of a multitude of thin leaves of *cow-dung*, imbricated like tiles upon a house, the upper-leaf formed of one unbroken sheet, covering the summit like a skull-cap. The leaves are placed one upon another, in a wavy or scalloped manner, so that numerous little arched entrances are left, and yet the interior is perfectly secured from rain. They are usually attached near the extremity of a branch, and some of the twigs pass through the nest. A vertical section presents a number of irregular cells, formed by the same process as the exterior. Towards the interior the cells are more capacious than those removed from the centre, and an occasional dried leaf is taken advantage of to assist in their formation. The nurseries for young broods in different stages of development are in different parts of the nest. The cells nearest the centre are filled with very minute eggs, the youngest members of the community; those more distant, with larger eggs*, mixed with leaves; and the most remote, with pupes near disclosure. In fact, in these last cells only were found winged insects. The female is in a large or royal cell, near the centre of the nest: she is about half an inch long, of the thickness of a crow-quill, white, and the abdomen has

* It should seem from this that the eggs grow.

five or six brown ligatures round it, like the female of the white ants; the head is very small, and the legs mere rudiments: she is kept a close prisoner, and incapable of motion in her cell; a circumstance in which these appear to approach the white ants, and which indicates that they should form a distinct genus.

There was no store of provisions in the nests: they were indebted therefore for their support to daily labour. We may gain some idea of their perseverance when we consider that the material of which the nest is formed—cow-dung—must have been sought for on the earth, and probably carried from a considerable distance up the trees.

Colonel Sykes's account of the large black ant we reserve for a future number.

[KIRBY's *Bridgewater Treatise*.]

PROGRESS OF THE HUMAN MIND.

WHILE Nature has apparently frowned on the birth of man, and brought him into the world weak, naked, and defenceless, unprovided with the means of subsistence, and exposed on every side to destruction, she has in reality implanted in him the germ of future greatness. The helplessness of the infant calls forth the fostering care and tenderest affections of the mother, and lays the deep foundations of the social union. The latent energies of his mind and body are successively, though slowly, developed. While the vital organs are actively engaged in the execution of their different offices, while the digestive apparatus is exercising its powerful chemistry, while myriads of minute arteries, veins, and absorbents, are indefatigably at work in building and modelling this complex frame, the sentient principle is no less assiduously, and no less incessantly, employed.

From the earliest dawn of sensation it is ever busy in arranging, in combining, and in strengthening the impressions it receives. Wonderful as is the formation of the bodily fabric, and difficult as it is to collect its history, still more marvellous is the progressive construction of the human mind, and still more arduous the task of tracing the finer threads which connect the delicate web of its ideas, which fix its fleeting perceptions, and which establish the vast system of its associations; and of following the long series of gradations, by which its affections are expanded, purified, and exalted, and the soul prepared for its higher destination in a future stage of existence.

Here, indeed, we perceive a remarkable interruption to that regular gradation which has been traced in all other parts of the animal series; for between man and the most sagacious of the brutes, there intervenes an immense chasm, of which we can hardly estimate the magnitude. The functions which are purely vital, and are necessary for even the lowest degree of sensitive existence, are possessed equally by all animals: in the distribution of the faculties of mere sensation, a greater inequality may be perceived; the intellectual faculties, again, are of a more refined and noble character, and being less essential to animal life, are dealt out by Nature with a more sparing and partial hand. Between the two extremities of the scale we find an infinite number of intermediate degrees. The more exalted faculties are possessed exclusively by man, and constitute the source of the immense superiority he enjoys over the brute creation, which so frequently excels him in the perfection of subordinate powers. In strength and swiftness he is surpassed by many quadrupeds. In vain may he wish for the power of flight possessed by the numerous inhabitants of air. He may envy that range of sight which enables the bird to discern,

from a height at which it is itself invisible to our eyes, the minutest objects on the surface of the earth. He may regret the dulness of his own senses, when he adverts to the exquisite scent of the hound, or the acute hearing of the bat. While the delicate perceptions of the lower animals teach them to seek the food which is salutary, and avoid that which is injurious, man alone seems stunted in his powers of discrimination, and is compelled to gather instruction from a painful and hazardous experience.

But, if Nature has created him thus apparently helpless, and denied him those instincts with which she has so liberally furnished the rest of her offspring, it was only to confer upon him gifts of infinitely higher value. While in acuteness of sense he is surpassed by inferior animals, in the powers of intellect he stands unrivalled. In the fidelity and tenacity with which impressions are retained in his memory, in the facility and strength with which they are associated, in grasp of comprehension, in extent of reasoning, in capacity of progressive improvement, he leaves all other animals at an immeasurable distance behind. He alone enjoys in perfection the gift of utterance; he alone is able to clothe his thoughts in words; in him alone do we find implanted the desire of examining every department of nature, and the power of extending his views beyond the confines of this globe. On him alone have the high privileges been bestowed of recognising and of adoring the power, the wisdom, and the goodness of the Author of the universe, from whom his being has emanated, to whom he owes all the blessings which attend it, and by whom he has been taught to look forward to brighter skies, and to purer and more exalted conditions of existence. Heir to this high destination, man discards all alliance with the beasts that perish; confiding in the assurance that the dissolution of his earthly frame destroys not the germ of immortality which has been implanted within him, and by the development of which the great scheme of Providence here commenced, will be carried on, in a future state of being, to its final and perfect consummation.—ROGET.

HUBER, THE NATURALIST.

HUBER has been blind from the age of seventeen. At that period he fell in love with a rich young lady, who returned his affection, and consented to become his wife. A few months afterwards he was afflicted with gutta serena, which deprived him entirely of sight. He was sent to Paris in the hope that a cure might be effected, but he obtained no relief, and returned in despair to Geneva. Mademoiselle Lullen married the object of her disinterested affection, notwithstanding his misfortune. This excellent woman soon discovered a thousand means of supplying the wants which her husband's calamity occasioned. During the war she formed whole armies of pins of various sizes, and thus enabled him to distinguish the positions of the different corps. She stuck pins in a map, and thus gave her husband a correct idea of the movements of the troops. A method by which he was enabled to write was invented for him, and his wife formed plans of the places they inhabited in relief. He had a great taste for natural history. He made his wife read to him a number of works on the subject, and particularly relative to bees. With her assistance he made several discoveries, which he published under the title of "*Researches on Bees*." To extensive knowledge M. Huber joined an extraordinary memory, and he related in a graceful style a great variety of interesting anecdotes.

[From memoirs of the Court of the Empress Josephine.]

WHEN Almighty God condescends to speak to man, it is man's duty and interest to hear and attend; not to "hide himself from the voice of the Lord God," as did his sinful progenitor among the trees of the garden of Eden, but to listen with a willing ear, and an humble and obedient heart.—BISHOP MANT.

CARPETS.

CARPETS are of oriental origin, and are made of different sorts of stuffs; some of them of silk ornamented with gold, others of cotton, but by far the greater part of wool. They are woven in a variety of ways.

Persia and Turkey carpets are the most esteemed. They are woven in a piece, in looms of a very simple construction, being only composed of two beams placed the one above the other, about eight feet separate, in parallel lines; the warp of the web being put on the uppermost, and brought down to the undermost beam, through the heddles. The pattern to be wrought is drawn and painted on design-paper, and placed before the weaver, who works the figure into the warp with dyed worsted yarn, cut into proper lengths. He then passes a woof-shot through the web, to bind the worsted yarn. When the carpet is made to the dimensions required, it is then taken out of the loom, and dressed with shears made for the purpose. Till of late years, the manufacture of these carpets were confined to Persia and Turkey; but they are now successfully imitated at Axminster in the south of England, and at Kilmarnock in the west of Scotland.

Brussels, Wilton, imperial Brussels, and royal Wilton carpets, are all woven in looms of the same construction, and derive their names from the places where they were invented. The difference of their fabric consists as follows: viz., in the Brussels, the worsted yarn raised to form the pile and show the figure is not cut; in the Wilton the pile is cut, and has the appearance of velvet; in the imperial Brussels, the figure is raised above the ground, and the pile cut, the ground uncut; and in the royal Wilton, the pile is raised higher than in the Wilton, and cut, which makes it a more massy carpet. The cloth of these carpets is composed of linen and worsted, and the loom for weaving them is very ingeniously constructed. The linen is put on a beam, and brought through heddles and a reed; it is only used to bind the worsted yarn, and should not appear on the right side. The better it is covered, the more complete and perfect is the carpet.

The worsted yarn is put on small bobbins, with a weight attached to each to keep the yarn of a uniform tightness. There are in some of the looms 1300, and in others 1800 of these bobbins, (according to the width of the web, which is generally twenty-seven inches, although some are thirty-six inches,) placed in frames behind the loom, and planted of different coloured yarn, to answer the figure. The yarn is then passed through the harness, heddles, and reed, to combine with the linen yarn, and form the cloth. The harness is tied to tail-cords, which are passed through a frame filled with small pulleys; a simple is then attached to the tail-cords, and brought down by the side of the loom, upon which the pattern of the carpet intended to be wrought is put with lashes, and drawn by boys. Machines have been introduced in place of boys, but they have not been found to answer the purpose so well as in the other sorts of carpeting. When the boy draws the lash, he has in one hand a piece of thin board, three feet long, and six inches broad, which is called a sword. This sword he passes through under the yarn so drawn with the lash, and keeps it on its edge until the weaver passes a wire through in front of the reed. This wire keeps up the worsted, and the weaver throws two shots of linen woof through the web, and forms the pile. It is necessary to have sixty of these wires for raising the pile, and at all times to have, at least, six of them in the web next to the reed, or else the worsted would sink, and the linen appear on the right side of the carpet, which is a great defect. When it is intended to make Wilton and royal Wilton, the wires that are used have a groove in them; and a small knife with a guide to it, called a travat, is drawn across the web into the groove, and cuts the pile; and for making imperial Brussels, both a round wire and a grooved wire are used at the same time.

Double, or Kidderminster, carpeting is composed of two plies of cloth, and having what is called a right and a wrong side, the colours being reversed. Suppose a carpet of scarlet and black, what is scarlet on one side will be black on the other. They are, however, made in a variety of colours; and when done so, the warp of the web is made of small yarn, so that when it happens to be of a different colour from the woof, it may appear as little as possible; for in this sort of carpeting there cannot be put more than two colours in a line without mixing, whereas in Brussels five can be thus put.

The warp of the web is put all on one beam, and passed

through the harness and reed; the figure intended to be wrought is raised by a machine placed on the top of the loom above the harness. A machine was in use for this purpose, which was invented in Kilmarnock about eighteen years ago, and was wrought on the principle of the organ-barrel; but it is now superseded by another, where the figure is cut on paper, and is consequently called a paper-machine. It is of French invention, and was originally used in the silk trade, but is now in common use in the carpet trade. This sort of carpeting differs from the Brussels, inasmuch as that both warp and woof appear on the surface of the cloth, whereas in Brussels it is the warp only.

With regard to three-ply imperial, or Scotch carpeting, although it is only recently that this sort of carpeting has been made, it is getting very much into repute, and is considered very little inferior to Brussels. Some years ago an attempt was made in England to make three-ply carpeting, but it did not succeed; they could not make the figure distinct on both sides, and it was abandoned. Kilmarnock has the merit of obviating this defect, by bringing them to their present state, and of fairly establishing the trade, which has now become very considerable, and is still increasing. They are woven in the same way, and in looms of the same construction, as the two-ply carpeting, having three plies of cloth in place of two plies, which makes them much more durable and comfortable, being nearly one-half heavier in the fabric, and every way superior in appearance. In this sort of carpeting, as well as in the two-ply Kidderminster, it is the woof which predominates, and shows the figure.

French, or tapestry, carpeting differs from Kidderminster and three-ply imperial Scotch carpeting, inasmuch as it is the warp of the web, which is made of the worsted, that shows the figure. In other respects they are much the same, and are woven in looms of the same construction, with a machine and the other appendages.

Venetian carpeting is made both plain and figured, and is used mostly for stairs. The plain ones are woven in looms of a very simple construction, having only heddles and reed. The warp is a very heavy body of worsted yarn, and should cover the woof so completely that it cannot be seen. The pattern is generally in stripes, and shaded like the rainbow; and the great object of the manufacturer is to bring off the shade of colour from dark to light imperceptibly. They are likewise made checked, and in squares like a draught-board. The figured Venetian are woven in looms of the same construction as the two-ply, or Kidderminster carpeting, having a machine to raise the pattern wanted, which is of the warp of the web, and is all worsted yarn, the woof being covered by it, which is composed of a thick shot of woollen and a small shot of linen yarn alternately. Besides these described above, there is also Dutch carpeting, woven much in the same way as plain Venetian, but coarser, some of them being made of cow-hair.

There are other branches of the arts and sciences upon which the successful manufacturing of carpeting very much depends, such as spinning, dyeing, and drawing. In Scotland it is matter of regret that so few artists have turned their attention to the designing and drawing of patterns for Persian, Turkey, Brussels, and double or three-ply carpeting. In England there are some who make it a very lucrative branch of trade, and we have no doubt but it may become equally so in this country.

The carpet-trade in Scotland is much indebted to the Board of Trustees for the Encouragement of Domestic Manufactures, for the very liberal premiums given by them to the successful competitors in carpet-weaving. They have, by their patriotic exertions, introduced into this country several sorts of carpeting, which are likely to become a very considerable branch of trade, and consequently employ a number of men, and likewise to consume a great portion of wool, a staple article of the country. The premiums sometimes amount to between six and seven hundred pounds.

[Encyclopædia Britannica.]

It is a great part of wisdom to determine in what way a man's usefulness may best be employed.—GILPIN.

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